FOUR PORT KVM SWITCH

USER MANUAL

CS-74E

Read this guide thoroughly and follow the installation and operation procedures carefully in order to prevent any damage to the unit and/or any devices that connect to it.

This package contains:

- 1 CS-74E Four Port KVM Switch
- 4 CS Custom KVM Cables
- 1 Console Connector Cable
- 1 User Manual

If anything is damaged or missing, contact your dealer.

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Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna;
- Increase the separation between the equipment and receiver;
- Connect the equipment into an outlet on a circuit different from that which the receiver is connected;
- Consult the dealer or an experienced radio/television technician for help.

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OVERVIEW

The CS-74E KVM (Keyboard, Video, Mouse), Switch is a control unit that allows acess to up to four computers from a single console (keyboard, monitor, and mouse). With its custom designed connectors, the CS-74E significantly reduces the number of ports required for a 4 port KVM switch.

The special connector design, featuring a custom SPDB-15 male connector for the keyboard, video, and mouse, provides several advantages over standard KVM switch implementations: 1) increased reliability; 2) a handsome, space-saving, vertical-standing, modern appearance; and 3) neater, more efficient, cabling that eliminates the usual tangled cable mess.

Setup is fast and easy; plugging cables into their appropriate ports is all that is entailed. There is no software to configure; no need to get involved in complex installation routines; and no need to be concerned with incompatibility problems. Since the CS-74E intercepts keyboard and mouse input directly, it works on any hardware platform and with all operating systems.

The CS-74E provides two convenient computer access methods: 1) switching the KVM focus to a computer by pressing one of the push button port selection switches located on the unit's front panel; and 2) switching to the target computer by entering hotkey combinations from the keyboard.

There is no better way to save time and money than with an CS-74E installation. By allowing a single console to manage all of the computers, the CS-74E eliminates the expense of purchasing a separate keyboard, monitor, and mouse for each one. Additionally, it saves the extra space and energy costs that they would require, and eliminates the inconvenience and wasted effort involved in constantly having to move from one computer to another.

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FEATURES

- Compact vertical-standing design
- Custom connector layout requires only 5 ports - 4 SPDB-15 female connectors for connecting to the computers - plus a single, integrated, SPDB-15 male connector for the keyboard, video, and mouse console
- Easy to install - no software required - connecting cables to the computers is all it takes
- Easy to operate - computer selection via selection switches or hotkeys
- Power on detection - automatically switches to the first powered on port
- Auto scan function to monitor computer operation
- LED display for easy status monitoring
- Hot pluggable - add or remove computers without powering down the switch
- Caps Lock, Num Lock, and Scroll Lock states are saved and restored when switching
- Keyboard and mouse emulation for error free computer booting
- Supports Microsoft IntelliMouse and the scrolling wheel on most mice
- Superior video quality - up to 2048 x 1536; DDC2B
- Non-powered
- Saves Time, Space, Power, and Equipment Costs

System Requirements

Console

- A VGA, SVGA, or Multisync monitor capable of the highest resolution that you will be using on any computer in the installation
- A PS/2 style keyboard
- A PS/2 style mouse

Computers

The following equipment must be installed on each computer that is to be connected to the system:

- A VGA, SVGA or Multisync port.
- A PS/2 Style keyboard port.
- A PS/2 Style mouse port.

Cables

Only CS Custom cable sets specifically designed to work with this switch may be used. One Console Connector Cable, as well as two 1.2 m and two 1.8 m KVM cable sets are provided with this package.

KVM cable sets are also available in 3, and 6 meter lengths. If you need additional cables, contact your dealer.

Length	CS Part Number
1.2 m	2L-5201P
1.8 m	2L-5202P
3.0 m	2L-5203P
6.0 m	2L-5206P

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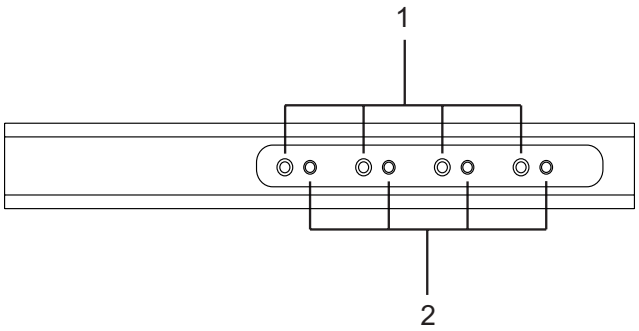
Components

Front View:



1. Port Selection Switches

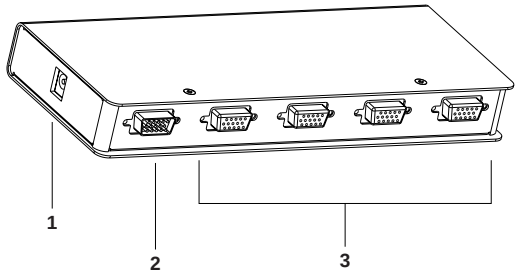
- Press a switch to give the KVM focus to the system attached to its corresponding port.
- Pressing Buttons 1 and 2 simultaneously starts *Auto Scan Mode* (see p. 9).
- While in Auto Scan Mode, pressing any button exits Auto Scan Mode and switches the KVM focus to its corresponding port.

2. Port LEDs

The Port LEDs are built into the Port Selection Switches. A lit LED indicates that its corresponding Port is the one that has the KVM focus.

Depending on the Port's status, the LED may flash according to a specific pattern (see the table on p. 11 for details).

REAR



1. **Power Jack**
   The power adapter cable plugs in here.

   Note: The CS-74E does not require external power. Use of a power adapter is optional, and requires a separate purchase.

2. **Console Port Connector***
   The Console Adapter Cable plugs in here.

3. **CPU Port Connectors***
   The KVM cables that connect the unit to the mouse, keyboard, and video ports on the computers you are connecting up can plug into any available port.

***** The shape of the 15-pin CPU and Console port connectors has been specifically modified so that only cables designed to work with this switch can plug in (see the *Cables* section on p. 3 for details).

INSTALLATION

1. Make sure that power to all the devices you will be connecting up have been turned off. You must unplug the power cords of any computers that have the *Keyboard Power On* function.
2. To prevent damage to your installation due to ground potential difference, make sure that all devices on the installation are properly grounded.

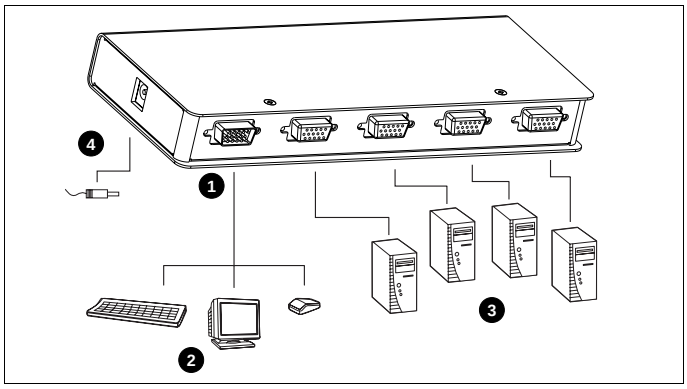
Refer to the diagrams on p. 7 as you do the following:

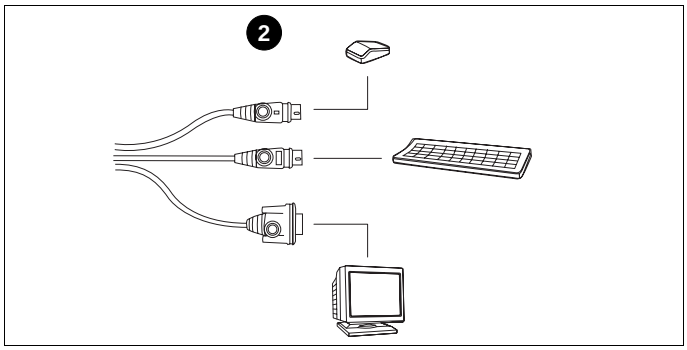
1. Plug the Console Adapter Cable into the Console Port Connector on the rear panel of the CS-74E.
2. Plug your keyboard, monitor and mouse into their respective connectors on the Console Adapter Cable. The connectors are color coded and marked with an appropriate icon for easy identification.
3. Use the custom KVM cables (described in the *Cables* section on p. 3), to connect the CS-74E CPU Ports to the monitor, keyboard and mouse ports of the computers you are installing.
4. If you choose to use external power, plug the power adapter into an AC power source, then plug the power adapter cable into the unit's Power Jack.

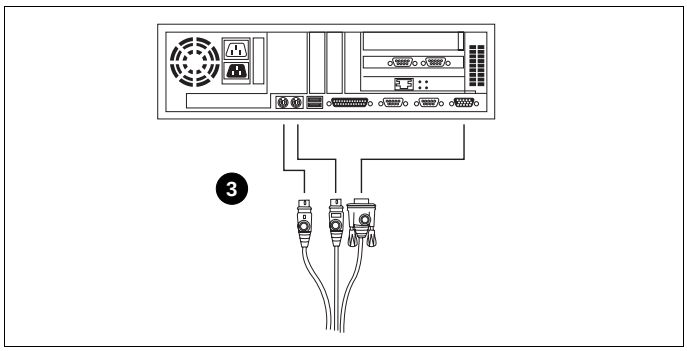
   Note: The power adapter should be DC9V with the inside positive and the outside negative:

5. Turn on the power to the computers.

   Note: The CS-74E's default is to link to the first computer you turn on.







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Operation

Manual Port Selection

With Manual Port Selection you simply press the appropriate Port Selection switch on the unit's front panel to give the KVM focus to its corresponding port. The Port LED lights to indicate that its port has the KVM focus.

Hotkey Port Selection

Hotkey port selection allows you to directly access a computer from the keyboard, instead of having to manually switch to it with the Port Selection button. The CS-74E provides three Hotkey navigation features:

- Selecting the Active Port
- Auto Scan Mode
- Skip Mode

Invoking Hotkey Mode:

All Hotkey operations begin by invoking *Hotkey Mode*. Invoking Hotkey Mode takes three steps: 1) Press and hold down the **Num Lock** key; 2) Press and release the **asterisk** key or the **minus** key; 3) Release the **Num Lock** key:

```
[Num Lock] + [*];
```

or:

```
[Num Lock] + [-];
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Note: The asterisk or minus key must be released within one half second, otherwise Hotkey invocation is canceled and it has no effect.

When Hotkey Mode is active:

- The Caps Lock and Scroll Lock LEDs flash in succession to indicate so. They stop flashing and revert to normal status when you exit Hotkey Mode.
- Ordinary keyboard and mouse functions are suspended - only Hotkey compliant keystrokes and mouse clicks (described in the sections that follow), can be input.
- Pressing [Esc] or [Spacebar] exits Hotkey Mode.

Selecting the Active Port:

Each CPU port is assigned a numeric Port ID (1 - 4). You can give the KVM focus directly to any computer on the installation with a Hotkey combination as follows:

1. Invoke Hotkey Mode (see p. 8)
2. Press and release the computer's **Port ID** number (1, 2, 3, or 4)

After you press the number, the KVM focus switches to the designated computer and you automatically exit Hotkey Mode.

Auto Scan Mode:

The CS-74E's Auto Scan feature automatically cycles through the ports at regular 5 seconds intervals so that you can monitor the computer activity without having to take the trouble of switching manually. To invoke Auto Scan Mode:

1. Invoke Hotkey Mode (see p. 8)
2. Press and release **[A]**

Once scanning begins, it continues until you press [Esc] or [Spacebar] to exit Auto Scan Mode. The Port that is active at the time scanning stops remains active.

Note: 1. While Auto Scan Mode is in effect, ordinary keyboard and mouse functions are suspended. You must exit Auto Scan Mode by pressing [Esc] or [Spacebar] in order to regain normal control of their use.

2. Pressing [Esc] or [Spacebar] exits both Auto Scan Mode and Hotkey Mode.

Skip Mode:

This feature allows you to skip from the currently active Port to the Previous or Next one with a single keystroke. In contrast to Auto Scan Mode (which switches Ports at a fixed interval), you can dwell on a particular port for as long or as little as you like. To activate Skip Mode:

1. Invoke Hotkey Mode (see p. 8)
2. Press [←] to skip from the current port to the port that comes before it (3 to 2; 2 to 1, etc.).
3. Press [→] to skip from the current port to the port that comes after it (1 to 2; 2 to 3, etc.).

Note: 1. Skip Mode remains in effect until you exit it. You can use [←] and [→] as often as you like. Ordinary keyboard and mouse functions are suspended - only [←] and [→] can be input. You must exit Skip Mode in order to regain normal control of the console.

2. Pressing [Esc] or [Spacebar] exits both Skip Mode and Hotkey Mode.

Hotkey Summary Table

After invoking Hotkey Mode:

Combination	Function
[Port ID Number]	Switches the KVM focus to the computer that corresponds to that Port ID.
[A]	Invokes Auto Scan Mode
[←]	Switches the KVM focus from the current port to the previous port.
[→]	Switches the KVM focus from the current port to the next port.
[Esc] or [Spacebar]	Exits Hotkey, Auto Scan, and Skip Modes.

Selected LED Display

Activity	Meaning
Off	Port is not selected.
On (Steady)	The computer connected to the LED's corresponding port is the one that has the KVM focus.
Flashing (On and Off equal)	The computer connected to the LED's corresponding port is the one that has the KVM focus and is being accessed in Auto Scan mode.

SPECIFICATIONS

Function		Specification
CPU Ports		4
Port Selection		Push Button Switches; Hotkeys
Connectors	CPU	4 x SPDB-15 F (Yellow)
	Console	1 x SPDB-15 M (Yellow)
LEDs		4 Selected Port (Green)
Emulation	Keyboard	PS/2
	Mouse	PS/2
Scan Interval		5 secs.
Operating Temperature		0 - 50^{o} C
Storage Temperature		-20 - 60^{o} C
Humidity		0 - 80% RH, Noncondensing
Housing		Metal
Weight		0.50 Kg
Dimensions (L x W x H)		20.0 x 8.0 x 2.5 cm

TROUBLESHOOTING

Symptom	Cause	Action
Keyboard [1] and/or Mouse[2] Not Responding	Loose cables.	Check all cable connections to make sure they are completely seated in their sockets.
	Switch is in Auto Scan Mode.	Press either Port Selection switch or the Spacebar to exit Auto Scan Mode.
	Keyboard / Mouse needs to be reset.	Unplug the keyboard / mouse from the Console Keyboard Port, then plug it back in.
	Mouse set to Serial Mode.	Some mice can be set to act as either a PS/2 or serial mouse. Make sure the mouse is set to PS/2 mode.
	Incorrect Mouse Driver.	Check your Device Manager to be sure that the correct driver for your mouse (obtained from the manufacturer, or supplied by the operating system), has been installed. Because of the wide variety of mouse driver standards for the modern series of mice (the ones with the extra buttons and wheels), this unit only supports all of the extra features of the Microsoft Intellimouse. It supports the scroll wheel function of most other mice.
	Switch needs to be reset.	Turn off the computers; wait 5 seconds; turn the computers back on.
Video Problems	Loose cables.	Check all cable connections to make sure they are completely seated in their sockets.
	Resolution and/or Bandwidth set too high.	This unit supports VGA, SVGA, Multisync, and XGA (interlaced), with resolutions of up to 2048x1536.

Troubleshooting Notes:

1. This unit is designed to work with PS/2 keyboards and mice. XT (84 key) and AT keyboards will not work. Serial mice will not work.
2. Some Notebooks, notably the IBM Thinkpad and Toshiba Tecra, have trouble when their mouse and keyboard ports are used simultaneously. To avoid this, only connect the mouse port or the keyboard port. If you connect the mouse port, you will need to use the notebook's keyboard when the notebook becomes the active computer.

Limited Warranty

IN NO EVENT SHALL THE DIRECT VENDOR'S LIABILITY EXCEED THE PRICE PAID FOR THE PRODUCT FROM DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THE PRODUCT, DISK, OR ITS DOCUMENTATION.

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